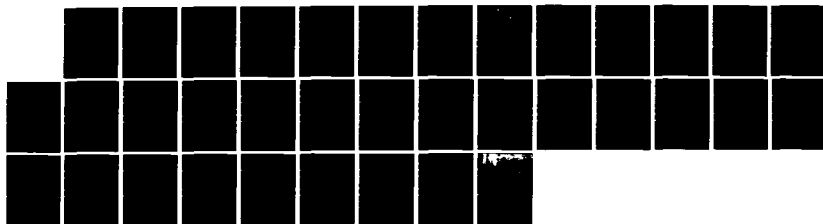
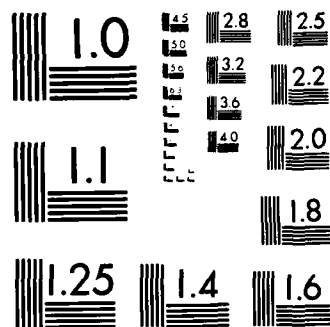


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19310 MLRS MISSILE NUMBERS BN-308 BN-317 BN-318 BN-320 1/1  
BN-312 BN-322 ROU. (U) ARMY ELECTRONICS RESEARCH AND  
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MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

JUL 83  
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(12)

AD A131919

METEOROLOGICAL DATA REPORT

19310A MLRS  
Missile Number BN-308, BN-317,  
BN-310, BN-320, BN-322  
Round Number 485/DL-25 thru 490/DL-30  
29 July 1983

by

DONALD C. KELLER  
Program Support Coordinator  
Phone Number (505) 679-9568  
AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1312	2. GOVT ACCESSION NO. AD-A131919	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 19310A MLRS Missile Number BN-308, BN-317, BN-310, BN-320, BN-312, BN-322 Round Number 485/DL-25 thru 490/DL-30		5. TYPE OF REPORT & PERIOD COVERED
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19310A MLRS, Missile Number BN-308, BN-317, BN-310, BN-320, BN-312, BN-322, Round Number 485/DL-25 thru 490/DL-30 are presented in tabular form.		

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## INTRODUCTION

19310A MLRS, Missile Numbers BN-308, BN-317, BN-310, BN-320, BN-312, and BN-322, Round Numbers 485/DL-25 thru 490/DL-30, were launched from Brillo, White Sands Missile Range (WSMR), New Mexico, at 0915:01, 0915:05, 0915:10, 0915:14, 0915:19, and 0915:23 MDT, 29 JUL 83. The scheduled launch times were 0915 MDT with a 4.5 second separation.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the Brillo Met Site at T-0 minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at Brillo. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

#### SITE AND ALTITUDE

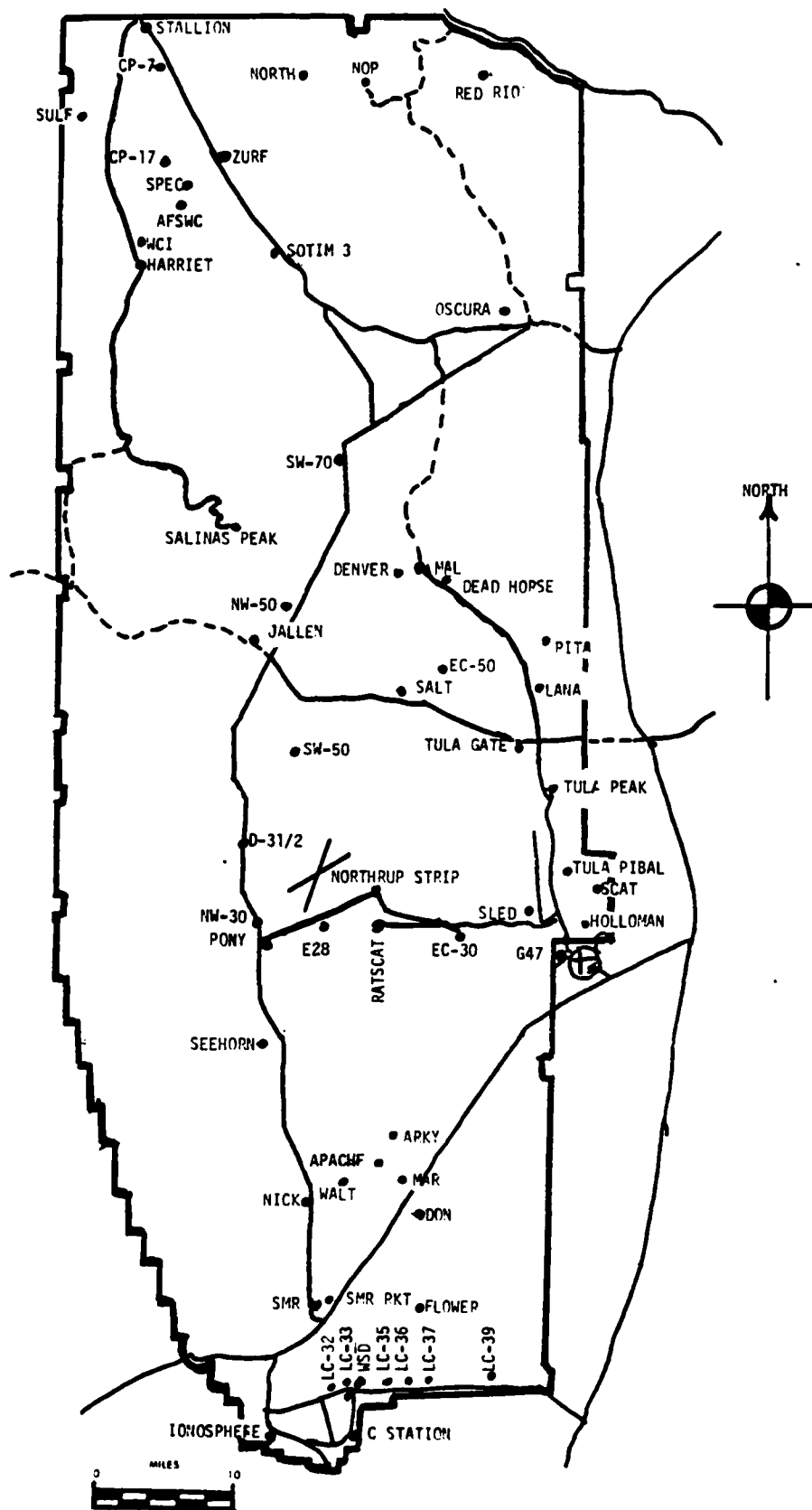
D $3\frac{1}{2}$	2 Km
Mal	2 Km

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

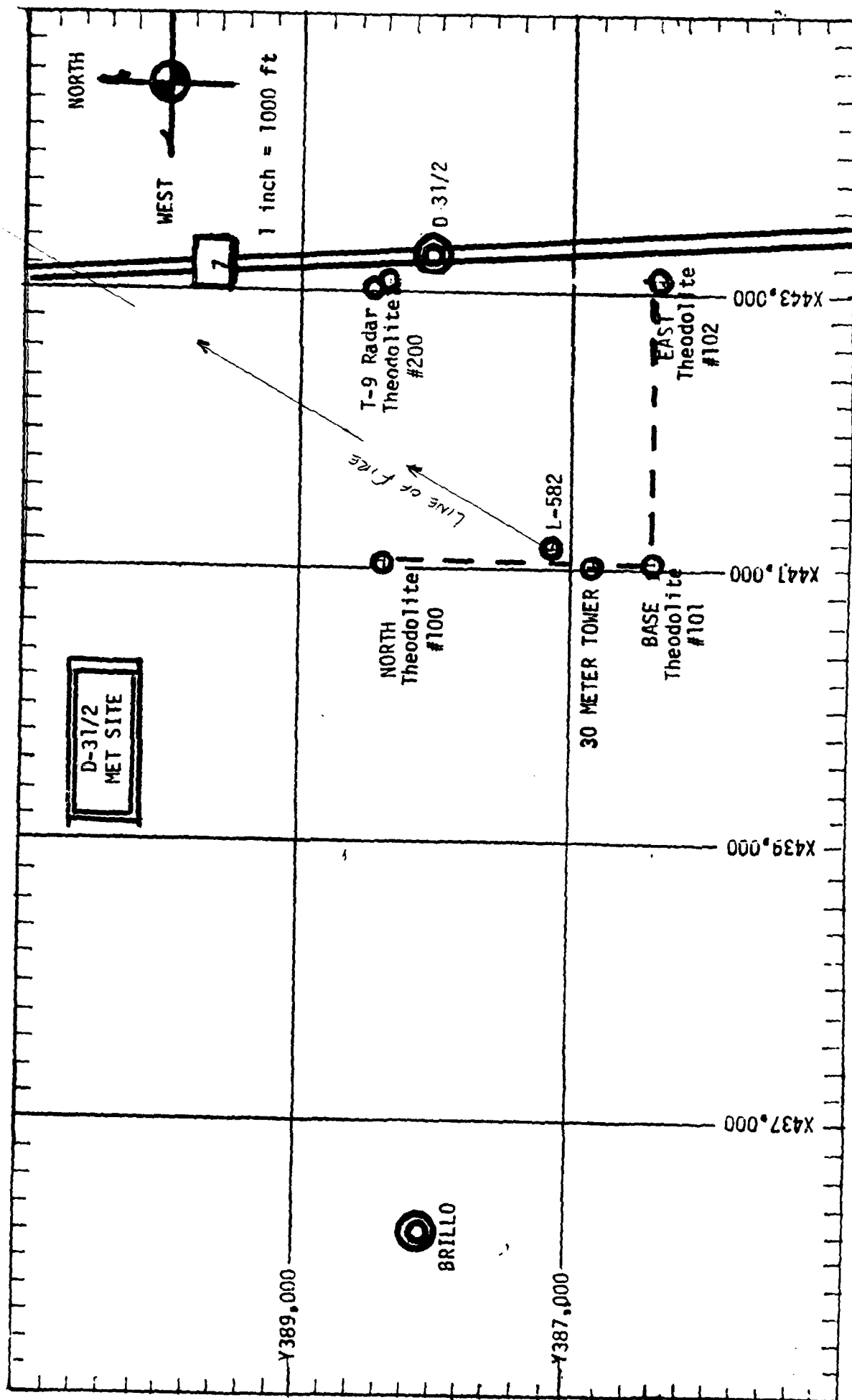
#### SITE AND TIME

E-28	0615 MDT
JALLEN	0800 MDT
E-28	0915 MDT

# WSMR METEOROLOGICAL SITES







# PROJECT SURFACE OBSERVATION

TABLE 1		STATION		Brillo	
DATE 29 JUL 83		Y= 443.093.12		Y= 386.316.94 H= 3962.25	
TIME MDT		PRESSURE mbars		TEMPERATURE OF	
		OC		OC	
0915	880.9	29.2	12.5	36	

TIME	M D T	DIRECTION	SPEED	CHARACTER	VISIBILITY
		340	04		20

OBSTRUCTIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	HGT	AMT	HGT	AMT	HGT	
1 SC	6000	4 AC	12500	1 CI	25000	H ALQDS	

## PSYCHROMETRIC COMPUTATION

TIME: MDT	0915	
DRY BULB TEMP.	29.2	
WET BULB TEMP.	18.1	
WET BULB DEPR.	11.1	
DEW POINT	12.5	
RELATIVE HUMID.	36	

TABLE 2

Anemometer Data - 30 FT. Level of 30 Meter Tower

X= 441,018.71 Y= 326,349.19 H= 4,004.80 (BASE)

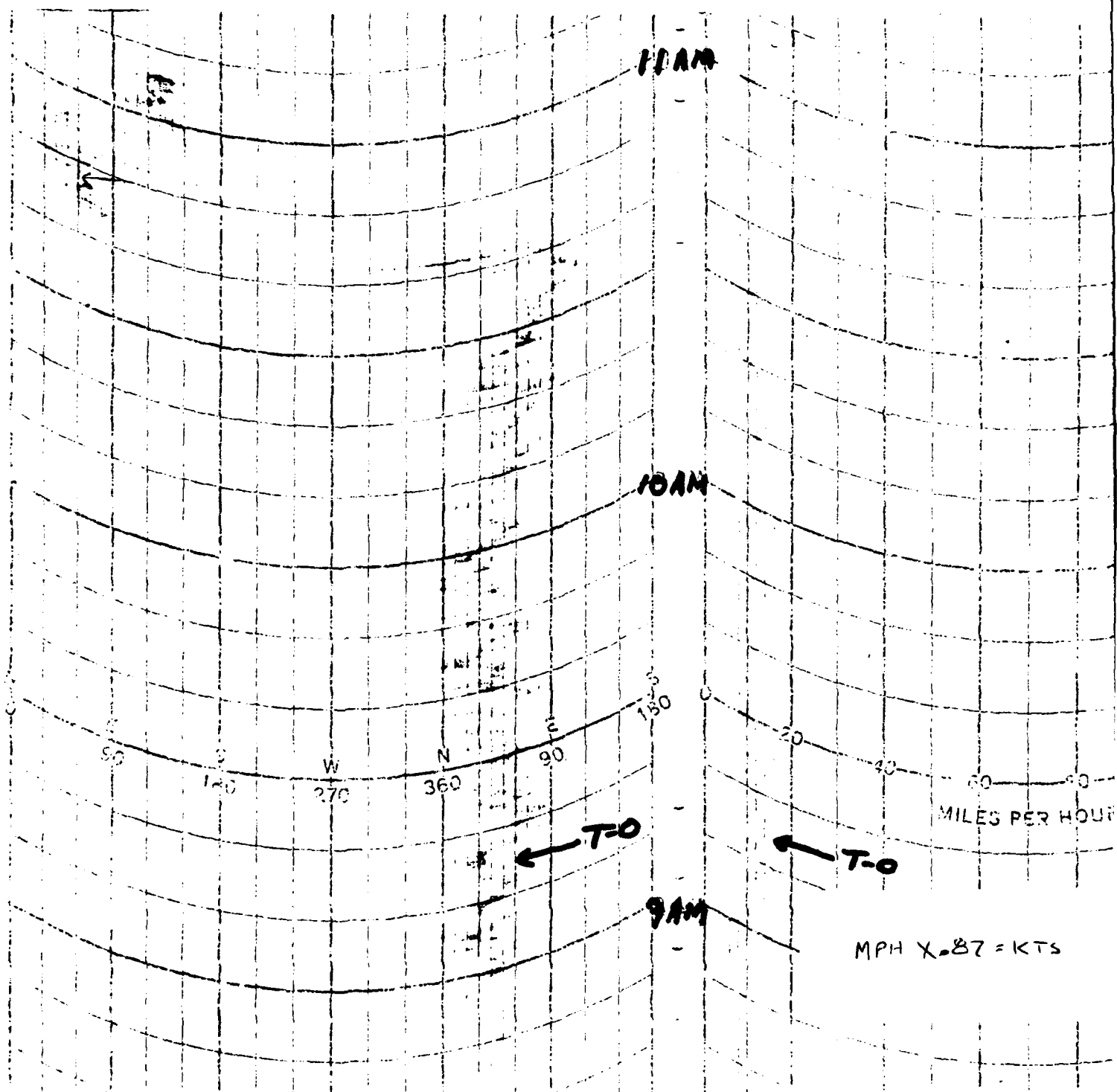


TABLE 3

Anemometer Data = 60 FT. Level of 30 Meter Tower

X= 441,018.71 Y= 386,349.19 H= 4,004.00 (BASE)

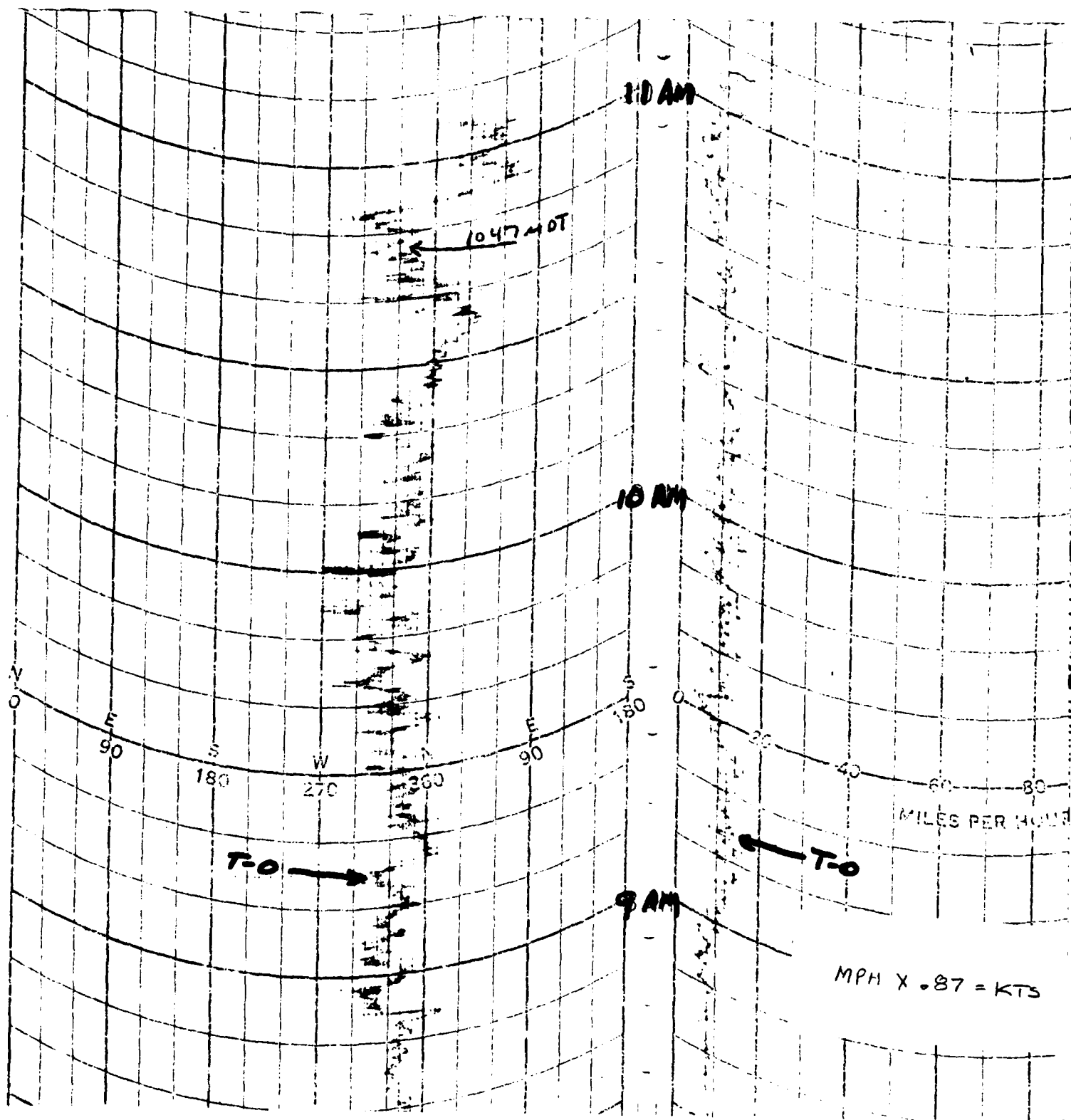


TABLE . 4

Anemometer Data - 90 FT Level of 30 Meter Tower

X= 441,018.71 Y= 336,849.19 H= 4,004.80 (BASE)

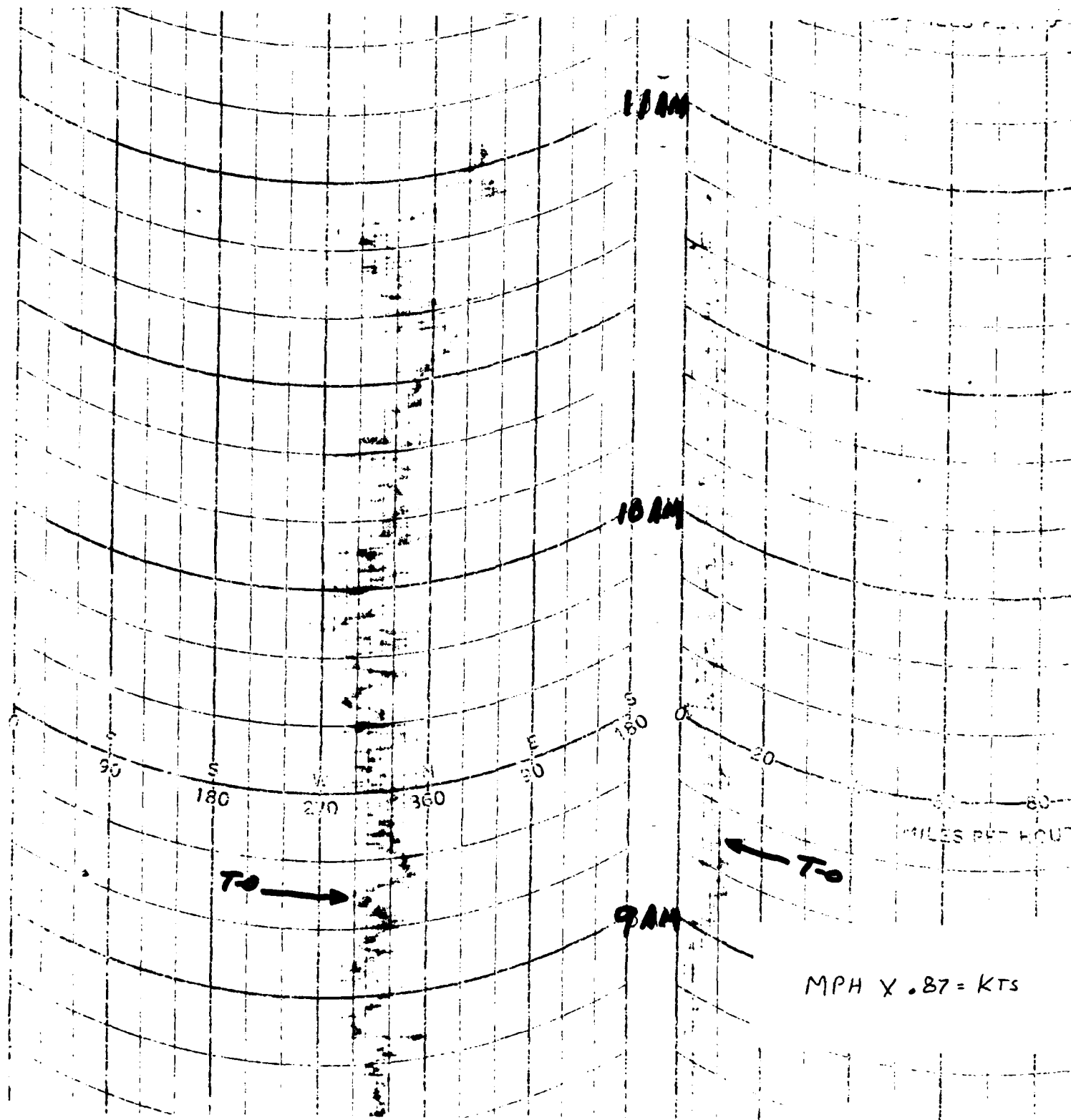


TABLE 5

## T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 29 JUL 83

SITE: D 3½  
TIME: 0915 MDT  
WSTM COORDINATES:  
X= 443,093.12  
Y= 386,316.94  
H= 3,962.25

SITE: MAL  
TIME 0915 MDT  
WSTM COORDINATES:  
X= 509,421.05  
Y= 495,563.18  
H= 4,126.81

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	340	04
150	357	15
210	357	17
270	355	16
330	353	16
390	352	15
500	351	11
650	357	10
800	001	12
950	002	13
1150	011	10
1350	052	07
1550	066	07
1750	112	06
2000	132	08

Data obtained from a Single Theodolite  
tracked Pilot-Balloon observation.

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	350	10
150	007	14
210	015	13
270	023	13
330	028	12
390	030	12
500	030	10
650	030	07
800	040	04
950	085	05
1150	122	05
1350	106	07
1550	099	09
1750	106	08
2000	096	14

Data obtained from a Double Theodolite  
tracked Pilot-Balloon observation.

## AIMING AND T-TIME COMPUTER MET MESSAGES

29 July 1983

E-28 0615 MDT

METCML329065

291230119883

00089002 29800883  
 01610009 29970873  
 02036003 30050849  
 03193002 29890811  
 04310003 29470766  
 05207006 29050723  
 06170010 28630681  
 07197009 28160641  
 08209012 27700603  
 09210013 27280567  
 10187008 26910533  
 11247004 26660500  
 12281008 26140454  
 13160007 25570398  
 14193012 24900347  
 15241014 24080302  
 16281011 23360262  
 17322015 22480226  
 18308016 21740194  
 19343008 21090165  
 20361016 20650140  
 21312016 20270119  
 22307012 20160100  
 23157016 20470085  
 24206020 21030072  
 25164015 21280062  
 26144021 21430052

JALLEN 0800 MDT

METCML332065

291400124880

00018002 29940880  
 01006004 29950870  
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 03084007 29700807  
 04173005 29440762  
 05196012 29030719  
 06197011 28600678  
 07192014 28150638  
 08200017 27700600  
 09213014 27260564  
 10144005 26910530  
 11201004 26610497  
 12210006 26090451  
 13231010 25490395  
 14244013 24820345  
 15232011 24070300  
 16256012 23270260  
 17322016 22470224  
 18298013 21670192  
 19271010 21140164  
 20348017 20590139  
 21330018 20220118  
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 23197015 20550084  
 24181017 21290072  
 25185018 21430061  
 26177018 21510052

E-28 0915 MDT

METCML329065

291530119885

00604003 30140885  
 01606008 30130875  
 02080002 29970851  
 03118003 29730812  
 04219007 29440767  
 05203007 29070724  
 06171011 28670682  
 07176014 28250642  
 08186016 27780605  
 09202015 27330568  
 10180012 26980534  
 11143009 26690501  
 12183008 26190455  
 13265015 25670399  
 14234014 25000349  
 15214014 24220304  
 16214013 23390263  
 17242014 22560227  
 18265016 21920195  
 19306013 21280166  
 20347015 20670142  
 21308019 20340120  
 22269011 20250101  
 23170021 20470086  
 24234016 21160073  
 25169016 21310062  
 26161022 21400053

STATION ALTITUDE 3912.75 FEET MSL  
29 JULY 83 0615 MDT  
ASCENSION NO. 41

SIGNIFICANT LEVEL DATA  
2100290041  
EAST-20/CHERRY

GEODETIC COORDINATES  
32.89927 LAT DEG  
136.40591 LON DEG

TABLE 7

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE		REL. HUM. PERCENT
	AIR	DEWPOINT	
883.4	22.9	12.8	53.0
879.2	24.4	12.0	48.0
870.3	25.0	12.3	43.0
850.0	25.3	11.5	42.0
834.2	26.0	10.2	37.0
700.0	14.0	2.3	45.0
687.5	12.8	.9	44.0
607.8	3.4	-1.2	72.0
548.4	-3.4	-3.9	96.0
523.9	-5.8	-6.2	97.0
500.0	-7.1	-8.0	93.0
486.9	-8.1	-10.0	86.0
468.3	-11.2	-11.6	97.0
448.5	-12.7	-13.1	97.0
430.4	-15.0	-15.4	97.0
418.3	-15.5	-18.4	78.0
408.1	-16.7	-26.5	42.0
400.0	-17.3	-27.6	40.0
365.6	-21.3	-32.1	37.0
361.6	-22.5	-35.9	28.0
341.1	-25.0	-36.2	34.0
325.1	-27.6	-36.7	41.0
300.0	-33.1	-36.7	57.0
281.0	-37.0	-41.4	63.0
268.5	-38.9	-47.1	41.0
250.0	-43.3		
200.0	-54.3		
182.2	-58.5		
167.4	-61.4		
150.0	-66.7		
142.2	-65.7		
122.2	-70.1		
109.9	-72.0		
105.9	-70.9		
100.0	-71.8		
	-73.0		
95.4	-69.7		
92.7	-70.4		
86.7	-67.5		
83.6	-64.7		
76.3			



STATION ALTITUDE 3,12.75 FEET MSL  
 20 JULY 83 0615 MDT  
 ASCENSION NO. 41

SIGNIFICANT LEVEL DATA  
 2100290041  
 EAST-26/CHEERY

GEODETIC COORDINATES  
 32.89927 LAT DEG  
 136.40591 LON DEG

TABLE 7 CON'T

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
70.0	61030.5	-61.4		
50.0	68877.1	-58.6		
40.7	73208.9	-52.8		

STATION ALTITUDE 3912.75 FEET MSL  
29 JULY 83 0615 MDT  
ASCENSION NO. 41

UPPER AIR DATA  
2100290041  
EAST-20/CHERRY

GEODETIC COORDINATES  
32.89927 LAT DEG  
136.40591 LON DEG

TABLE 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE			KNOTS	DEGREES(TN)	SPEED KNOTS		
3912.7	885.4	22.9	12.8	53.0	1032.9	672.4	50.0	1.9	1.000294	
4000.0	880.7	23.3	12.6	51.0	1020.3	672.9	51.1	2.0	1.000292	
4500.0	865.6	25.7	12.1	42.8	1002.8	675.5	57.1	2.1	1.000283	
5000.0	850.7	25.3	11.5	42.0	987.0	675.1	62.3	2.2	1.000278	
5500.0	835.1	25.9	10.4	37.6	968.4	675.6	67.0	2.4	1.000269	
6000.0	821.6	25.0	9.5	37.7	954.8	674.5	63.6	1.7	1.000264	
6500.0	807.2	23.7	8.8	38.5	942.1	673.1	137.7	1.4	1.000259	
7000.0	793.1	22.5	8.0	39.3	929.6	671.6	169.5	1.3	1.000254	
7500.0	779.2	21.3	7.2	40.1	917.2	670.2	166.1	1.9	1.000249	
8000.0	765.6	20.1	6.4	40.9	905.1	668.8	144.7	3.3	1.000244	
8500.0	752.2	18.9	5.6	41.7	893.1	667.3	141.5	4.5	1.000240	
9000.0	739.0	17.7	4.8	42.5	881.2	665.9	137.2	5.5	1.000235	
9500.0	725.1	16.5	4.0	43.3	869.6	664.4	117.0	6.6	1.000231	
10000.0	713.4	15.3	3.2	44.1	858.1	663.0	104.0	8.3	1.000226	
10500.0	700.9	14.1	2.3	44.9	846.8	661.6	95.9	10.2	1.000222	
11000.0	688.4	12.9	1.0	44.1	835.4	660.1	95.1	9.5	1.000217	
11500.0	675.9	11.5	.8	47.9	824.2	658.5	96.6	8.3	1.000214	
12000.0	663.6	10.1	.7	52.1	813.1	656.9	102.8	7.9	1.000212	
12500.0	651.5	8.7	.5	56.2	802.3	655.2	108.8	8.2	1.000209	
13000.0	639.6	7.3	.1	60.4	791.6	653.6	112.8	9.6	1.000206	
13500.0	627.9	5.9	-.3	64.6	781.1	651.9	114.5	10.7	1.000203	
14000.0	616.5	4.5	-.7	68.8	770.8	650.3	115.2	11.5	1.000200	
14500.0	605.1	3.1	-1.2	73.0	760.4	648.7	117.1	12.1	1.000197	
15000.0	593.8	1.9	-1.7	77.4	749.6	647.2	119.2	12.7	1.000194	
15500.0	582.6	.6	-2.1	81.9	738.9	645.7	121.6	13.3	1.000191	
16000.0	571.7	-.6	-2.6	86.3	728.4	644.2	120.1	13.4	1.000188	
16500.0	561.0	-1.9	-3.2	90.7	718.1	642.7	114.3	13.0	1.000185	
17000.0	550.4	-3.2	-3.8	95.1	708.0	641.2	109.7	11.6	1.000182	
17500.0	540.0	-4.2	-4.7	96.3	697.3	639.8	105.4	9.7	1.000178	
18000.0	529.7	-5.2	-5.7	96.8	686.7	638.6	105.1	6.3	1.000174	
18500.0	519.5	-6.0	-6.5	96.3	675.7	637.6	109.4	4.6	1.000170	
19000.0	509.5	-6.6	-7.3	94.6	664.1	636.9	119.0	4.4	1.000167	
19500.0	499.7	-7.1	-8.1	92.9	652.8	636.2	132.0	6.0	1.000163	
20000.0	490.1	-7.9	-9.5	87.7	642.1	635.3	139.4	8.0	1.000159	
20500.0	480.6	-9.1	-10.5	89.7	632.8	633.7	149.6	8.2	1.000156	
21000.0	471.2	-10.7	-11.3	95.2	624.2	631.8	158.9	8.7	1.000153	
21500.0	462.0	-11.7	-12.0	97.0	614.3	630.6	165.0	8.9	1.000150	
22000.0	452.9	-12.4	-12.7	97.0	603.9	629.7	169.9	8.9	1.000147	
22500.0	444.0	-13.3	-13.6	97.0	594.1	628.6	164.3	7.4	1.000144	
23000.0	435.2	-14.4	-14.7	97.0	584.9	627.2	155.7	6.3	1.000141	

STATION ALTITUDE 3912.75 F. FT MSL  
29 JULY 83 0615 MDT  
ASCENSION NO. 41

UPPER AIR DATA  
2100290041  
EAST-20/CHERRY

GEODETIC COORDINATES  
32.09927 LAT DEG  
136.40591 LONG DEG

TABLE 8 CONT'D

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
23500.0	420.6	-15.2	-16.3	91.1	575.1	626.2	143.9	6.1	1.000138
24000.0	410.1	-15.5	-18.0	77.3	564.6	625.7	129.2	6.2	1.000134
24500.0	409.8	-16.5	-24.9	47.9	555.8	624.3	113.0	6.8	1.000128
25000.0	401.5	-17.2	-27.4	40.4	546.2	623.5	90.9	7.5	1.000125
25500.0	393.4	-18.0	-28.4	39.4	537.0	622.4	74.6	8.8	1.000123
26000.0	383.5	-18.9	-29.4	38.8	528.0	621.3	70.2	8.9	1.000121
26500.0	377.7	-19.9	-30.4	38.1	519.2	620.2	72.3	9.1	1.000118
27000.0	370.1	-20.8	-31.5	37.4	510.6	619.1	80.3	9.5	1.000116
27500.0	362.5	-22.2	-35.0	30.1	503.1	617.2	92.3	10.4	1.000114
28000.0	353.1	-23.3	-36.0	29.9	494.9	615.9	102.4	11.7	1.000112
28500.0	347.8	-24.2	-36.1	32.0	486.5	614.8	109.5	12.7	1.000110
29000.0	340.6	-25.1	-36.2	34.2	478.2	613.7	115.8	13.5	1.000108
29500.0	333.5	-26.2	-36.4	37.3	470.4	612.3	122.3	13.9	1.000106
30000.0	320.6	-27.3	-36.7	40.3	462.8	610.9	126.8	14.3	1.000105
30500.0	319.7	-28.7	-37.0	44.3	455.0	609.1	129.6	14.6	1.000103
31000.0	313.0	-30.2	-37.5	48.6	448.7	607.3	131.7	14.8	1.000101
31500.0	303.4	-31.7	-39.0	52.8	441.8	605.5	133.6	14.9	1.000100
32000.0	299.9	-33.1	-38.7	57.0	435.1	603.7	137.0	14.0	1.000098
32500.0	293.4	-34.4	-38.6	59.0	428.1	602.0	140.9	12.8	1.000097
33000.0	287.1	-35.7	-40.5	61.0	421.2	600.4	145.8	10.7	1.000095
33500.0	280.9	-37.0	-41.4	62.9	414.4	598.7	149.4	9.6	1.000093
34000.0	274.8	-37.9	-44.0	52.2	406.9	597.5	150.3	9.3	1.000091
34500.0	260.8	-38.8	-46.9	41.6	399.7	596.4	149.4	10.0	1.000090
35000.0	262.9	-40.2	-51.3	28.9**	393.1	594.6	148.0	11.1	1.000088
35500.0	257.1	-41.6	-57.3	16.1**	380.7	592.9	157.5	11.8	1.000086
36000.0	251.4	-43.0	-70.2	3.2**	380.5	591.1	165.9	12.6	1.000085
36500.0	245.7	-44.2			373.8	589.5	173.7	13.3	1.000083
37000.0	240.1	-45.3			367.1	588.1	178.7	13.9	1.000082
37500.0	234.6	-46.4			360.5	586.6	181.8	14.4	1.000080
38000.0	229.3	-47.6			354.1	585.1	183.2	15.0	1.000079
38500.0	224.0	-48.7			347.7	583.6	184.0	15.5	1.000077
39000.0	210.9	-49.8			341.5	582.2	180.6	15.0	1.000076
39500.0	213.9	-51.0			335.4	580.7	176.9	14.6	1.000075
40000.0	209.0	-52.1			329.5	579.2	172.7	14.7	1.000073
40500.0	204.3	-53.3			323.6	577.7	169.7	15.2	1.000072
41000.0	199.6	-54.4			317.8	576.2	169.9	16.3	1.000071
41500.0	194.9	-55.5			311.9	574.8	171.2	16.7	1.000069
42000.0	190.3	-56.5			306.0	573.4	174.1	16.3	1.000068
42500.0	185.8	-57.6			300.3	571.9	176.6	14.9	1.000067
43000.0	181.4	-58.7			294.6	570.6	179.6	13.0	1.000066

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3912.75 FT MSL  
29 JULY 83 0615 MDT  
ASCENSION NO. 41

UPPER AIR DATA  
2100290041  
EAST-28/CHERRY

GEODETIC COORDINATES  
32.89927 LAT DEG  
136.40591 LON DEG

TABLE 8 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION ULGRS(TN)	SPEED KNOTS	
4350.0	17.0	-59.5			288.6	569.5	181.6	10.8	1.000064
4400.0	17.2	-60.3			282.8	568.3	184.9	8.8	1.000063
4450.0	16.8	-61.1			277.1	567.2	191.3	7.9	1.000062
4500.0	16.4	-62.2			271.8	565.8	197.2	7.5	1.000061
4550.0	16.0	-63.4			266.6	564.2	195.8	8.3	1.000059
4600.0	15.6	-64.6			261.6	562.6	194.7	9.6	1.000058
4650.0	15.2	-65.8			256.7	561.0	193.8	12.2	1.000057
4700.0	14.9	-66.6			251.3	559.9	195.7	14.1	1.000056
4750.0	14.5	-66.1			244.5	560.6	200.7	15.2	1.000054
4800.0	14.1	-65.8			238.1	561.0	205.7	15.5	1.000053
4850.0	13.8	-66.5			233.0	560.0	211.1	15.3	1.000052
4900.0	13.4	-67.3			228.0	559.0	208.1	15.5	1.000051
4950.0	13.1	-68.0			223.1	558.0	203.2	15.8	1.000050
5000.0	12.8	-68.7			218.3	557.0	193.6	15.6	1.000049
5050.0	12.4	-69.5			213.7	556.0	184.4	15.8	1.000048
5100.0	12.1	-70.2			209.1	555.1	178.4	15.7	1.000047
5150.0	11.8	-70.6			204.2	554.4	172.6	15.7	1.000045
5200.0	11.5	-71.1			199.5	553.8	169.0	16.1	1.000044
5250.0	11.2	-71.5			194.9	553.2	166.5	16.6	1.000043
5300.0	11.0	-72.0			190.4	552.5	168.5	16.7	1.000042
5350.0	10.7	-71.3			184.9	553.6	171.0	16.4	1.000041
5400.0	10.4	-71.1			180.1	553.7	176.3	14.5	1.000040
5450.0	10.1	-71.5			175.9	553.2	180.5	12.7	1.000039
5500.0	9.9	-72.0			171.9	552.5	175.8	10.6	1.000038
5550.0	9.6	-72.7			168.0	551.6	166.7	8.5	1.000037
5600.0	9.4	-71.6			162.9	553.1	145.0	7.0	1.000036
5650.0	9.1	-69.8			157.4	555.6	116.4	6.8	1.000035
5700.0	8.9	-70.1			153.6	555.2	87.9	8.1	1.000034
5750.0	8.7	-70.3			150.0	554.8	75.6	11.0	1.000033
5800.0	8.5	-68.9			145.2	556.7	60.0	15.5	1.000032
5850.0	8.3	-67.3			140.5	559.0	45.4	20.0	1.000031
5900.0	8.1	-66.5			136.5	560.0	95.8	25.1	1.000030
5950.0	7.9	-65.8			132.6	561.0	102.5	29.1	1.000030
6000.0	7.7	-65.0			128.9	562.1	108.0	27.5	1.000029
6050.0	7.5	-64.1			125.2	563.3	113.6	25.7	1.000028
6100.0	7.3	-63.2			121.6	564.5	117.9	20.9	1.000027
6150.0	7.1	-62.2			118.1	565.8	123.4	16.7	1.000026
6200.0	6.9	-61.4			114.8	566.9	119.7	16.0	1.000026
6250.0	6.8	-61.2			111.9	567.2	115.7	15.3	1.000025
6300.0	6.6	-61.0			109.2	567.5	110.8	14.7	1.000024

STATION ALTITUDE 3912.75 FEET MSL  
29 JULY 83  
ASCENSION NO. 41 0615 MDT

UPPER AIR DATA  
2100290041  
EAST-28/CHELERY

GEODETIC COORDINATES  
32.89927 LAT DEG  
136.40591 LON DEG

TABLE 8 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup>	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TN)	SPEED KNOTS	
63500.0	64.9	-60.8			106.4	567.7	105.5	14.3	1.000024
64000.0	63.3	-60.6			103.8	568.0	98.2	14.3	1.000023
64500.0	61.8	-60.4			101.2	568.3	90.8	14.6	1.000023
65000.0	60.3	-60.2			98.7	568.6	87.1	15.6	1.000022
65500.0	58.9	-60.0			96.2	568.8	84.5	16.9	1.000021
66000.0	57.5	-59.8			93.8	569.1	82.0	16.8	1.000021
66500.0	56.1	-59.6			91.5	569.4	79.4	16.2	1.000020
67000.0	54.8	-59.4			89.2	569.6	76.7	17.1	1.000020
67500.0	53.5	-59.2			87.0	569.9	74.5	18.9	1.000019
68000.0	52.2	-59.0			84.9	570.2	76.0	21.0	1.000019
68500.0	50.9	-58.8			82.7	570.4	83.2	24.1	1.000018
69000.0	49.7	-58.4			80.7	570.9	88.6	27.4	1.000018
69500.0	48.5	-57.8			78.5	571.7	93.7	27.8	1.000017
70000.0	47.4	-57.1			76.4	572.6	98.7	28.4	1.000017
70500.0	46.3	-56.4			74.4	573.5	100.0	27.2	1.000017
71000.0	45.2	-55.8			72.4	574.4	99.5	24.9	1.000016
71500.0	44.1	-55.1			70.5	575.3			1.000016
72000.0	43.1	-54.4			68.7	576.2			1.000015
72500.0	42.1	-53.7			66.8	577.1			1.000015
73000.0	41.1	-53.1			65.1	577.9			1.000014

STATION ALTITUDE 3912.75 FEET MSL  
29 JULY 83 0615 MDT  
ASCENSION NO. 41

MANDATORY LEVELS  
2100290041  
EAST-28/CHERRY

GEODETIC COORDINATES  
32.89927 LAT DEG  
136.40591 LONG DEG

TABLE 9

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT	PERCENT		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5021.	25.3	11.5	42.		62.6	2.2
800.0	6767.	23.1	8.4	39.		154.4	1.3
750.0	8600.	18.7	5.5	42.		141.3	4.7
700.0	10528.	14.0	2.3	45.		95.4	10.4
650.0	12561.	8.5	.4	57.		109.4	8.4
600.0	14712.	2.5	-1.4	75.		110.0	12.4
550.0	17001.	-3.2	-3.8	95.		109.6	11.6
500.0	19460.	-7.1	-8.0	93.		131.5	5.9
450.0	22130.	-12.6	-13.0	97.		168.4	8.4
400.0	25054.	-17.3	-27.6	40.		67.4	7.7
350.0	28208.	-23.9	-36.1	31.		107.3	12.3
300.0	31929.	-33.1	-38.7	57.		136.9	14.0
250.0	36047.	-43.3				167.7	12.7
200.0	40858.	-54.3				169.9	16.1
175.0	43629.	-59.9				182.7	9.8
150.0	46741.	-66.7				194.0	13.8
125.0	50350.	-69.4				184.8	15.8
100.0	54683.	-71.8				177.6	11.3
80.0	59042.	-66.2				99.0	27.4
70.0	61727.	-61.4				120.4	16.1
60.0	64873.	-60.1				86.7	15.8
50.0	68619.	-58.6				87.1	20.4

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.00 F, ET MSL  
29 JULY 63 0800 MDT  
ASCENSION NO. 103

SIGNIFICANT LEVEL DATA  
2100030103  
JALLEH

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LONG DEG

TABLE 10

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
879.5	4051.0	24.5	42.0
875.5	4182.2	24.8	30.0
856.7	4807.7	25.5	32.0
856.0	5634.1	25.0	30.0
801.2	6728.8	21.9	40.0
774.9	7679.7	21.2	39.0
716.1	9903.4	15.7	40.0
700.0	10536.2	14.2	42.0
614.9	14074.1	4.7	59.0
576.1	15808.3	.1	69.0
553.7	16849.2	-2.9	94.0
500.0	19489.8	-7.4	96.0
463.8	21405.2	-10.9	85.0
440.6	22695.3	-14.4	97.0
423.0	23710.0	-16.1	98.0
414.8	24195.3	-16.4	97.0
400.0	25093.0	-17.7	56.0
379.2	26401.6	-20.4	42.0
337.5	29208.5	-26.2	34.0
300.0	31079.2	-32.3	39.0
286.5	33041.5	-35.6	45.0
267.5	34603.0	-38.9	40.9
250.0	36120.0	-42.6	
230.4	37919.1	-46.9	
200.0	40954.0	-54.9	
189.7	42061.0	-57.6	
170.9	44220.6	-60.0	
150.0	46671.4	-65.4	
125.1	50473.6	-70.0	
111.4	52737.9	-72.2	
104.4	54000.0	-71.6	
100.0	54834.8	-73.5	
93.6	56111.0	-73.5	
93.3	56173.6	-69.6	
79.2	59676.9	-66.2	
73.2	61021.5	-59.2	
70.0	61947.0	-58.9	
57.6	65987.8	-58.9	
50.0	68929.5	-57.7	
42.4	72398.2	-53.9	

STATION ALTITUDE 4051.00 FEET MSL  
 29 JULY 83  
 ASCENSION NO. 103

SIGNIFICANT LEVEL DATA  
 2100030103  
 JALLEN

GEODETIC COORDINATES  
 33.16712 LAT DEG  
 106.49511 LONG DEG

TABLE 10 CONT

PRESSURE GEOMETRIC MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
35.9 75042.2		-52.5



STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 83  
ASCENSION NO. 103

UPPER AIR DATA  
2100030103  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 11

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
4051.0	879.5	24.5	42.0	1023.6	674.0	10.0	1.9	1.000283
4500.0	865.9	25.2	31.0	1006.8	674.3	26.0	4.3	1.000267
5000.0	851.0	25.1	30.3	989.8	674.2	30.9	7.0	1.000262
5500.0	836.3	24.1	32.7	975.6	673.2	33.0	9.7	1.000260
6000.0	821.8	23.2	35.7	961.4	672.3	36.4	10.5	1.000258
6500.0	807.6	22.3	38.7	947.6	671.3	40.8	8.1	1.000256
7000.0	793.6	21.7	39.7	933.0	670.6	60.4	6.5	1.000253
7500.0	779.8	21.3	39.2	918.0	670.2	76.2	5.6	1.000248
8000.0	765.1	20.4	39.1	905.0	669.0	94.4	5.5	1.000243
8500.0	752.7	19.2	39.4	893.0	667.5	110.3	6.1	1.000238
9000.0	739.4	17.9	39.6	881.5	666.1	115.1	7.7	1.000233
9500.0	726.4	16.7	39.8	869.6	664.6	112.7	10.3	1.000228
10000.0	713.6	15.5	40.3	858.1	663.1	109.4	12.3	1.000223
10500.0	700.9	14.3	41.9	846.4	661.7	106.3	14.1	1.000220
11000.0	688.2	13.0	44.2	834.9	660.2	107.5	13.1	1.000217
11500.0	675.7	11.6	46.6	823.7	658.6	108.7	12.1	1.000213
12000.0	663.4	10.3	49.0	812.6	657.0	109.2	11.7	1.000210
12500.0	651.4	8.9	51.4	801.7	655.4	109.3	12.2	1.000207
13000.0	639.6	7.6	53.8	791.0	653.8	109.2	13.5	1.000203
13500.0	628.0	6.2	56.2	780.5	652.2	109.4	14.7	1.000200
14000.0	616.6	4.9	58.6	770.1	650.6	109.8	15.7	1.000197
14500.0	605.1	3.6	61.5	759.5	649.0	112.4	16.4	1.000193
15000.0	593.9	2.2	64.3	749.0	647.5	115.8	17.0	1.000190
15500.0	582.8	.9	67.2	738.7	645.9	117.9	16.5	1.000187
16000.0	571.9	-0.5	73.6	728.5	644.3	120.0	15.7	1.000184
16500.0	561.1	-1.9	85.6	718.4	642.6	116.8	13.6	1.000184
17000.0	550.5	-3.2	94.1	708.1	641.1	111.7	11.4	1.000181
17500.0	540.0	-4.0	94.5	696.8	640.1	103.4	8.2	1.000178
18000.0	529.6	-4.9	94.9	685.7	639.0	84.5	5.2	1.000174
18500.0	519.5	-5.7	95.3	674.6	638.0	75.7	3.2	1.000170
19000.0	509.6	-6.6	95.6	664.1	636.9	63.1	1.6	1.000167
19500.0	499.8	-7.4	95.9	653.6	635.9	106.3	3.3	1.000164
20000.0	490.1	-8.3	92.5	643.2	634.7	110.0	5.3	1.000160
20500.0	480.6	-9.2	89.1	633.0	633.5	116.7	6.8	1.000156
21000.0	471.2	-10.2	85.8	623.0	632.4	117.6	7.6	1.000152
21500.0	462.1	-11.2	84.0	613.3	631.1	119.1	6.9	1.000149
22000.0	453.0	-12.5	89.5	604.4	629.5	119.3	6.3	1.000146
22500.0	444.0	-13.9	94.9	595.6	627.8	117.2	5.8	1.000144
23000.0	435.2	-14.9	97.3	586.2	626.6	116.1	6.0	1.000141
23500.0	426.6	-15.7	97.8	576.4	625.5	116.1	6.6	1.000138

STATION ALTITUDE 1051.00 F ET MSL  
29 JULY 83  
ASCENSION NO. 103

UPPER AIR DATA  
2100030105  
JALLFN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 11 CONT'D

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE					DIRECTION DEGREES (TN)	SPEED KNOTS	
24000.0	410.1	-16.3	-16.0	97.4	560.1	624.9		122.7	7.2	1.000136
24500.0	409.7	-16.8	-19.0	83.1	556.2	624.1		126.9	8.2	1.000132
25000.0	401.5	-17.6	-23.4	60.2	546.8	623.1		128.7	9.3	1.000127
25500.0	393.4	-18.5	-26.0	51.6	537.9	621.0		129.7	10.1	1.000124
26000.0	385.5	-19.6	-28.1	46.3	529.2	620.6		129.8	10.1	1.000121
26500.0	377.7	-20.6	-30.2	41.7	520.7	619.3		131.4	10.3	1.000119
27000.0	369.9	-21.6	-31.5	40.3	512.1	618.0		138.5	11.1	1.000117
27500.0	362.3	-22.7	-32.8	38.9	503.7	616.7		143.5	12.0	1.000115
28000.0	354.9	-23.7	-34.1	37.4	495.4	615.4		143.9	12.7	1.000112
28500.0	347.6	-24.7	-35.4	36.0	487.3	614.1		143.3	13.0	1.000110
29000.0	340.4	-25.8	-36.8	34.6	479.3	612.8		139.7	12.2	1.000108
29500.0	333.3	-26.8	-37.7	34.5	471.3	611.5		137.0	11.7	1.000106
30000.0	326.3	-27.9	-38.5	35.4	463.5	610.1		137.5	11.8	1.000105
30500.0	319.5	-29.0	-39.2	36.3	455.8	608.7		136.7	11.9	1.000103
31000.0	312.8	-30.1	-40.0	37.2	448.3	607.4		133.1	11.9	1.000101
31500.0	306.2	-31.2	-40.8	38.1	440.6	606.0		129.3	11.9	1.000099
32000.0	299.7	-32.4	-41.6	39.1	433.6	604.6		125.1	11.9	1.000098
32500.0	293.3	-33.9	-42.3	41.9	427.0	602.6		122.7	11.9	1.000096
33000.0	287.0	-35.5	-43.2	44.8	420.6	600.7		124.7	12.0	1.000095
33500.0	280.8	-36.6	-44.3	44.1	413.4	599.3		127.4	12.2	1.000093
34000.0	274.7	-37.6	-45.5	43.2	406.2	597.9		132.1	12.4	1.000091
34500.0	268.7	-38.7	-46.7	42.2	399.2	596.6		136.0	12.6	1.000090
35000.0	262.8	-39.9	-50.4	31.0**	392.4	595.0		138.5	12.5	1.000088
35500.0	257.0	-41.1	-56.4	17.2**	385.8	593.5		143.3	12.3	1.000086
36000.0	251.3	-42.3	-69.5	3.3**	379.3	591.9		152.6	12.3	1.000085
36500.0	245.7	-43.5			372.8	590.4		163.2	12.6	1.000083
37000.0	240.2	-44.7			366.3	588.8		174.7	13.3	1.000082
37500.0	234.8	-45.9			360.0	587.3		180.7	14.2	1.000080
38000.0	229.5	-47.1			353.8	585.7		182.2	14.8	1.000079
38500.0	224.2	-48.4			347.6	584.0		181.6	15.8	1.000077
39000.0	219.1	-49.7			341.6	582.3		179.6	17.1	1.000076
39500.0	214.0	-51.1			335.7	580.6		178.5	17.4	1.000075
40000.0	209.1	-52.4			330.0	578.8		177.8	16.9	1.000073
40500.0	204.3	-53.7			324.3	577.1		176.2	15.8	1.000072
41000.0	199.6	-55.0			318.7	575.4		173.7	14.2	1.000071
41500.0	194.9	-56.2			312.9	573.8		170.4	13.0	1.000070
42000.0	190.3	-57.5			307.3	572.2		168.5	12.1	1.000068
42500.0	185.7	-58.1			300.8	571.3		161.4	11.6	1.000067
43000.0	181.3	-58.6			294.4	570.6		155.4	11.3	1.000066
43500.0	177.0	-59.2			288.1	569.8		151.1	10.6	1.000064

\*\* AT LAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 83 0800 MDT  
ASCENSION NO. 103

UPPER AIR DATA  
2100030103  
JALLEN  
TABLE 11 CONT'D

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE				DIRECTION DEGREES (TN)	SPEED KNOTS	
44000.0	172.7	-59.8			282.0	569.1	147.1	9.8	1.000063
44500.0	168.6	-60.6			276.2	568.0	146.6	9.5	1.000062
45000.0	164.5	-61.6			270.8	566.7	147.3	9.4	1.000060
45500.0	160.5	-62.6			265.5	565.3	155.5	9.3	1.000059
46000.0	156.6	-63.6			260.3	563.9	165.7	9.4	1.000058
46500.0	152.8	-64.6			255.2	562.5	190.6	12.4	1.000057
47000.0	149.0	-65.6			250.1	561.3	205.9	17.5	1.000056
47500.0	145.3	-66.2			244.6	560.4	207.2	19.4	1.000054
48000.0	141.7	-66.8			239.3	559.6	206.8	20.5	1.000053
48500.0	138.2	-67.5			234.1	558.7	198.4	18.5	1.000052
49000.0	134.7	-68.1			228.9	557.8	182.2	16.0	1.000051
49500.0	131.4	-68.8			223.9	557.0	175.1	15.9	1.000050
50000.0	128.1	-69.4			219.1	556.1	179.3	17.1	1.000049
50500.0	124.9	-70.0			214.3	555.2	182.7	18.1	1.000048
51000.0	121.8	-70.5			209.3	554.6	185.1	18.6	1.000047
51500.0	118.7	-71.0			204.5	553.9	185.6	18.7	1.000046
52000.0	115.7	-71.5			199.8	553.2	182.9	18.1	1.000045
52500.0	112.8	-72.0			195.3	552.6			1.000043
53000.0	109.9	-72.1			190.4	552.4			1.000042
53500.0	107.1	-71.8			185.4	552.0			1.000041
54000.0	104.4	-71.6			180.4	553.1			1.000040
54500.0	101.7	-72.7			176.9	551.5			1.000039
55000.0	99.1	-73.5			173.0	550.5			1.000039
55500.0	96.6	-73.5			168.6	550.5			1.000038
56000.0	94.1	-73.5			164.3	550.5			1.000037
56500.0	91.8	-69.3			156.8	556.2			1.000035
57000.0	89.5	-68.8			152.6	556.9			1.000034
57500.0	87.3	-68.3			148.4	557.6			1.000033
58000.0	85.1	-67.8			144.4	558.2			1.000032
58500.0	83.0	-67.3			140.5	558.9			1.000031
59000.0	80.9	-66.9			136.6	559.5			1.000030
59500.0	78.9	-66.4			132.9	560.2			1.000030
60000.0	77.0	-64.5			128.5	562.7			1.000029
60500.0	75.1	-61.9			123.9	566.2			1.000028
61000.0	73.3	-59.3			119.4	569.7			1.000027
61500.0	71.5	-59.0			116.4	570.0			1.000026
62000.0	69.8	-58.9			113.5	570.2			1.000025
62500.0	68.2	-58.9			110.8	570.2			1.000025
63000.0	66.5	-58.9			108.2	570.2			1.000024
63500.0	64.9	-58.9			105.6	570.2			1.000024

XX WIND DATA IN ALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 4001.00 FEET MSL  
29 JULY 83  
ASCENSION NO. 103

UPPER AIR DATA  
2100030103  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 11 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CURIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) SPEED KNOTS	INDEX OF REFRACTION
64000.0	63.4	-53.9		103.1	570.2		1.000023
64500.0	61.9	-58.9		100.6	570.2		1.000022
65000.0	60.4	-58.9		98.2	570.2		1.000022
65500.0	59.0	-58.9		95.9	570.2		1.000021
66000.0	57.6	-53.9		93.0	570.2		1.000021
66500.0	56.2	-53.7		91.3	570.5		1.000020
67000.0	54.9	-58.5		89.0	570.8		1.000020
67500.0	53.6	-58.3		86.8	571.1		1.000019
68000.0	52.3	-58.1		84.7	571.3		1.000019
68500.0	51.0	-57.9		82.6	571.6		1.000018
69000.0	49.8	-57.6		80.5	571.9		1.000018
69500.0	48.7	-57.1		78.5	572.7		1.000017
70000.0	47.5	-56.5		76.4	573.4		1.000017
70500.0	46.4	-56.0		74.4	574.1	96.1	1.000017
71000.0	45.3	-55.4		72.5	574.8	95.3	1.000016
71500.0	44.2	-54.9		70.6	575.6	94.5	1.000016
72000.0	43.2	-54.3		68.8	576.3	93.9	1.000015
72500.0	42.2	-53.9		67.0	576.9	93.4	1.000015
73000.0	41.2	-53.7		65.4	577.2	92.1	1.000015
73500.0	40.3	-53.5		63.8	577.4	88.6	1.000014
74000.0	39.3	-53.3		62.3	577.7	84.7	1.000014
74500.0	38.4	-53.1		60.8	577.9		1.000014
75000.0	37.5	-52.9		59.3	578.2		1.000013
75500.0	36.7	-52.7		57.9	578.5		1.000013

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 4051.00 FEET MSL  
29 JULY 83 0800 MDT  
ASCENSION NO. 103

MANDATORY LEVELS  
2100030103  
JALLEN

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

TABLE 12

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5031.	25.0	6.2	30.	31.1	7.1	
800.0	6766.	21.9	7.7	40.	54.0	7.0	
750.0	8508.	18.9	4.8	39.	113.1	6.2	
700.0	10526.	14.2	1.5	42.	106.3	14.1	
650.0	12561.	8.8	-6	52.	109.3	12.4	
600.0	14713.	3.0	-3.4	63.	113.9	16.7	
550.0	17003.	-3.2	-4.0	94.	111.5	11.3	
500.0	19463.	-7.4	-7.9	96.	105.0	3.2	
450.0	22134.	-13.0	-14.1	91.	110.7	0.1	
400.0	25052.	-17.7	-24.3	56.	129.0	9.5	
350.0	28289.	-24.4	-35.0	36.	144.1	13.1	
300.0	31916.	-32.3	-41.5	39.	125.4	11.9	
250.0	36042.	-42.6			154.5	12.3	
200.0	40856.	-54.9			174.0	14.4	
175.0	43622.	-59.5			149.5	10.2	
150.0	46746.	-65.4			202.4	15.9	
125.0	50346.	-70.0			182.5	10.0	
100.0	54667.	-73.5			9999.0XX		
80.0	59029.	-66.6			9999.0		
70.0	61737.	-58.9			9999.0XX		
60.0	64911.	-58.9			9999.0		
50.0	68673.	-57.7			9999.0XX		
40.0	73345.	-53.4			87.8	27.3	

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3912.75 FEET MSL  
29 JULY 83  
ASCENSION NO. 42 0915 MDT

SIGNIFICANT LEVEL DATA  
2100290042  
EAST-2B/CHERRY

GEODLTIC COORDINATES  
32.89927 LAT DEG  
136.40591 LON DEG

TABLE 13

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
885.0	3912.7	26.8	9.6	34.0
881.0	4044.2	27.4	6.8	27.0
850.0	5079.7	24.5	10.0	40.0
812.4	6377.8	22.5	9.0	42.0
802.8	6717.4	22.0	8.5	42.0
765.2	8081.3	19.8	6.5	42.0
700.0	10578.8	14.2	2.5	45.0
643.2	12904.6	8.5	-8	52.0
569.4	16165.8	-8	-2.5	88.0
517.2	18672.6	-5.7	-6.9	91.0
500.0	19544.1	-7.0	-7.5	96.0
472.3	21001.4	-9.7	-10.1	97.0
432.6	23214.4	-14.4	-16.1	87.0
413.3	24352.2	-15.0	-29.0	29.0
400.0	25164.5	-16.2	-27.2	38.0
384.2	26159.5	-18.1	-27.6	43.0
361.1	27675.3	-21.2	-35.9	25.0
327.8	30000.4	-26.7	-38.3	32.0
300.0	32086.0	-31.6	-40.0	43.0
264.4	34984.5	-39.0	-47.4	40.0
250.0	36240.4	-42.4		
210.9	39052.6	-51.5		
208.7	40177.1	-51.2		
200.0	41084.8	-53.4		
184.9	42741.7	-55.6		
156.1	46236.1	-63.2		
150.0	47041.4	-64.7		
133.5	49367.5	-68.3		
129.1	50030.3	-68.5		
116.7	52017.2	-70.5		
112.9	52665.4	-70.5		
108.7	53009.1	-69.8		
100.0	55044.1	-70.9		
95.3	55983.3	-71.7		
91.5	56781.6	-68.7		
82.3	58876.1	-68.7		
75.3	60662.2	-62.0		
70.9	62160.0	-59.9		
55.5	66943.9	-60.3		
50.0	69105.7	-57.9		

STATION ALTITUDE 3912.75 FEET MSL  
 29 JULY 83 0915 MDT  
 ASCENSION NO. 42

SIGNIFICANT LEVEL DATA  
 2100290042  
 EAST-28/CHERRY

GEODETTIC COORDINATES  
 32.89927 LAT DEG  
 136.40591 LON DEG

TABLE 13 CONT

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
47.3	73655.9	-52.5	

STATION ALTITUDE 3912.75 FEET MSL  
29 JULY 83 0915 MDT  
ASCENSION NO. 42

UPPER AIR DATA  
2100290042  
EAST-28/CHEERY  
TABLE 14

GEODETTIC COORDINATES  
32.89927 LAT DEG  
136.40591 LONG DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUMID. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KIOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3912.7	883.0	26.8	9.0	34.0	1022.6	676.4	340.0	2.9	1.000278
4000.0	882.3	27.2	7.8	29.4	1018.6	676.7	342.0	2.8	1.000272
4500.0	867.2	26.1	8.5	32.7	1004.6	675.6	356.2	2.4	1.000271
5000.0	852.3	24.7	9.8	39.0	991.4	674.2	14.4	2.2	1.000273
5500.0	837.6	23.9	9.7	40.6	977.2	673.2	34.0	2.3	1.000269
6000.0	823.2	23.1	9.3	41.4	962.8	672.3	55.5	2.2	1.000265
6500.0	808.9	22.3	8.8	42.0	948.7	671.4	78.3	2.4	1.000261
7000.0	794.9	21.5	8.1	42.0	934.8	670.5	99.6	3.1	1.000256
7500.0	781.0	20.7	7.4	42.0	921.2	669.5	111.9	3.8	1.000250
8000.0	767.4	19.9	6.6	42.0	907.7	668.6	120.8	4.3	1.000245
8500.0	753.9	18.9	5.9	42.5	895.2	667.3	124.9	4.9	1.000241
9000.0	740.5	17.7	5.0	43.1	882.9	665.9	127.0	5.5	1.000236
9500.0	727.5	16.6	4.2	43.7	870.8	664.6	115.3	6.6	1.000231
10000.0	714.6	15.5	3.4	44.3	858.9	663.3	106.0	8.0	1.000227
10500.0	702.0	14.4	2.6	44.9	847.1	661.9	99.2	9.7	1.000223
11000.0	689.4	13.2	1.9	46.3	835.5	660.5	96.0	11.1	1.000219
11500.0	676.9	11.9	1.2	47.8	824.1	659.0	95.4	11.8	1.000215
12000.0	664.7	10.7	.5	49.3	812.8	657.6	96.2	12.5	1.000211
12500.0	652.7	9.5	-.2	50.8	801.7	656.1	97.5	13.3	1.000207
13000.0	640.9	8.2	-.8	53.1	790.8	654.6	99.2	14.1	1.000204
13500.0	629.0	6.8	-.7	58.6	780.0	653.0	100.9	14.9	1.000202
14000.0	617.4	5.4	-.9	64.1	769.5	651.3	102.8	15.3	1.000200
14500.0	606.0	4.0	-1.1	69.6	759.1	649.7	104.5	15.5	1.000197
15000.0	594.8	2.5	-1.4	75.1	749.0	648.0	106.2	15.0	1.000194
15500.0	583.7	1.1	-1.8	80.7	738.9	646.3	108.8	14.7	1.000192
16000.0	572.9	-.3	-2.3	86.2	729.1	644.6	112.4	14.4	1.000189
16500.0	562.1	-1.5	-3.1	88.4	718.4	643.2	112.8	14.0	1.000185
17000.0	551.5	-2.4	-4.0	89.0	707.4	642.0	111.4	13.4	1.000181
17500.0	541.0	-3.4	-4.9	89.6	696.6	640.8	105.9	12.6	1.000177
18000.0	530.7	-4.4	-5.7	90.2	685.9	639.6	99.3	11.8	1.000174
18500.0	520.6	-5.4	-6.6	90.8	675.5	638.4	91.5	10.8	1.000170
19000.0	510.7	-6.2	-7.1	92.9	664.6	637.4	83.5	10.0	1.000167
19500.0	500.9	-6.9	-7.5	95.7	653.7	636.5	82.1	9.1	1.000164
20000.0	491.2	-7.8	-8.3	96.3	643.3	635.4	84.0	8.5	1.000161
20500.0	481.7	-8.8	-9.2	96.7	633.1	634.2	93.5	8.4	1.000158
21000.0	472.3	-9.7	-10.1	97.0	623.1	633.1	97.5	8.5	1.000154
21500.0	463.0	-10.8	-11.4	94.7	613.5	631.7	96.9	8.6	1.000151
22000.0	454.0	-11.8	-12.8	92.5	604.0	630.4	97.7	8.5	1.000147
22500.0	445.0	-12.9	-14.1	90.2	594.6	629.0	99.3	8.3	1.000144
23000.0	435.5	-13.9	-15.5	88.0	585.4	627.7	118.5	8.6	1.000141



STATION ALTITUDE 5912.75 FEET MSL  
29 JULY 83 0915 MDT  
ASCENSION NO. 42

UPPER AIR DATA  
2100290042  
EAST-200/CHERRY

GEODETTIC COORDINATES  
32.89927 LAT DEG  
136.40591 LONG DEG

TABLE 14 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS	
23500.0	427.7	-14.6	72.4	575.4	626.9	134.7	10.1	1.000136
24000.0	419.2	-14.8	47.0	564.8	626.4	145.9	12.9	1.000131
24500.0	410.8	-15.2	30.6	554.0	625.8	150.3	15.0	1.000127
25000.0	402.7	-16.0	36.2	545.1	625.0	149.1	15.5	1.000125
25500.0	394.6	-16.8	39.7	536.0	623.9	148.2	15.4	1.000123
26000.0	386.7	-17.8	42.2	527.2	622.7	147.5	14.6	1.000121
26500.0	378.9	-18.8	39.0	518.0	621.5	144.6	13.8	1.000119
27000.0	371.2	-19.8	33.0	510.3	620.2	139.7	13.1	1.000116
27500.0	363.7	-20.8	27.1	502.0	618.9	136.0	13.1	1.000114
28000.0	356.3	-22.0	26.0	493.9	617.5	133.0	13.4	1.000112
28500.0	348.9	-23.2	27.5	486.1	616.1	133.5	13.6	1.000110
29000.0	341.7	-24.3	29.0	478.3	614.6	133.8	13.7	1.000108
29500.0	334.7	-25.5	30.5	470.7	613.1	129.1	13.6	1.000106
30000.0	327.8	-26.7	32.0	463.2	611.7	124.8	13.6	1.000105
30500.0	320.9	-27.9	34.6	455.7	610.2	122.1	13.5	1.000103
31000.0	314.2	-29.0	37.3	448.3	608.7	119.9	13.5	1.000101
31500.0	307.6	-30.2	39.9	441.0	607.3	119.3	13.5	1.000099
32000.0	301.1	-31.4	42.5	433.8	605.8	118.9	13.7	1.000098
32500.0	294.6	-32.7	42.6	426.7	604.2	119.0	14.8	1.000096
33000.0	288.3	-33.9	42.1	419.7	602.6	120.3	15.7	1.000094
33500.0	282.1	-35.2	41.5	412.9	601.0	119.5	15.7	1.000093
34000.0	276.0	-36.5	41.0	406.2	599.4	119.0	15.5	1.000091
34500.0	270.0	-37.8	40.5	399.6	597.7	119.2	13.8	1.000090
35000.0	264.2	-39.0	39.5**	393.1	596.1	119.7	12.1	1.000088
35500.0	258.4	-40.4	23.6**	386.7	594.4	122.1	10.9	1.000086
36000.0	252.7	-41.7	7.7**	380.4	592.6	125.1	9.7	1.000085
36500.0	247.0	-43.0		374.0	591.0	128.6	10.1	1.000083
37000.0	241.4	-44.3		367.5	589.4	131.8	10.6	1.000082
37500.0	236.0	-45.5		361.1	587.8	133.0	12.1	1.000080
38000.0	230.6	-46.7		354.8	586.2	133.9	13.7	1.000079
38500.0	225.4	-47.9		348.7	584.6	136.1	15.3	1.000078
39000.0	220.3	-49.2		342.6	583.0	138.2	16.7	1.000076
39500.0	215.3	-50.4		336.7	581.5	140.1	17.8	1.000075
40000.0	210.4	-51.4		330.6	580.1	142.2	17.6	1.000074
40500.0	205.6	-52.0		323.8	579.4	144.3	17.5	1.000072
41000.0	200.8	-53.2		318.0	577.8	146.5	16.3	1.000071
41500.0	196.1	-54.0		311.7	576.8	149.0	15.0	1.000069
42000.0	191.5	-54.6		305.3	575.9	151.4	14.5	1.000068
42500.0	187.0	-55.3		299.0	575.0	153.7	14.4	1.000067
43000.0	182.6	-56.2		293.2	573.9	156.4	14.3	1.000065

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3912.75 FT MSL  
29 JULY 83 0915 MDT  
ASCENSION NO. 42

UPPER AIR DATA  
2100290042  
EAST-20/CHERRY

GEODETIC COORDINATES  
32.89927 LAT DEG  
136.40591 LON DEG

TABLE 14 CONT

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TN) DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
43500.0	170.2	-57.2		287.6	572.4	159.2	14.4	1.000004
44000.0	174.0	-58.3		282.1	571.0	163.1	14.2	1.000063
44500.0	169.8	-59.4		276.8	569.5	167.8	13.8	1.000062
45000.0	165.7	-60.5		271.5	568.1	172.4	13.3	1.000060
45500.0	161.8	-61.6		266.4	566.6	177.1	12.7	1.000059
46000.0	157.9	-62.7		261.4	565.2	182.4	12.7	1.000058
46500.0	154.1	-63.7		256.3	563.8	187.6	13.1	1.000057
47000.0	150.3	-64.6		251.1	562.6	192.1	13.7	1.000056
47500.0	146.6	-65.4		245.8	561.5	195.8	14.5	1.000055
48000.0	143.0	-66.2		240.6	560.5	198.1	15.0	1.000054
48500.0	139.4	-67.0		235.6	559.4	198.1	15.0	1.000052
49000.0	136.0	-67.7		230.6	558.4	197.4	15.0	1.000051
49500.0	132.6	-68.3		225.6	557.5	192.5	15.1	1.000050
50000.0	129.3	-68.5		220.1	557.3	187.6	15.4	1.000049
50500.0	126.1	-69.0		215.1	556.7	181.6	16.9	1.000048
51000.0	122.9	-69.5		210.2	556.0	176.7	18.6	1.000047
51500.0	119.6	-70.0		205.4	555.3	172.0	20.3	1.000046
52000.0	116.8	-70.5		200.8	554.6	168.3	21.8	1.000045
52500.0	113.9	-70.5		195.7	554.6	167.1	21.6	1.000044
53000.0	111.0	-70.2		190.5	555.0	166.1	21.2	1.000042
53500.0	108.2	-69.9		185.4	555.5	167.6	18.4	1.000041
54000.0	105.5	-70.2		181.0	555.0	169.5	15.6	1.000040
54500.0	102.8	-70.5		176.8	554.5	163.8	12.0	1.000039
55000.0	100.2	-70.9		172.6	554.1	153.2	8.5	1.000038
55500.0	97.7	-71.3		168.6	553.5	126.5	8.8	1.000038
56000.0	95.2	-71.6		164.6	553.0	105.8	10.9	1.000037
56500.0	92.8	-69.8		159.0	555.6	95.7	13.9	1.000035
57000.0	90.5	-68.7		154.2	557.0	89.7	17.3	1.000034
57500.0	88.2	-68.7		150.3	557.0	88.9	19.6	1.000033
58000.0	86.0	-68.7		146.6	557.0	89.2	21.5	1.000033
58500.0	83.9	-68.7		142.9	557.0	95.3	22.3	1.000032
59000.0	81.8	-68.2		139.1	557.7	104.2	23.0	1.000031
59500.0	79.8	-66.4		134.4	560.2	114.1	23.0	1.000030
60000.0	77.8	-64.5		129.9	562.8	125.8	22.8	1.000029
60500.0	75.9	-62.6		125.0	565.3	133.8	21.8	1.000028
61000.0	74.1	-61.5		121.9	566.7	136.7	18.0	1.000027
61500.0	72.3	-60.8		118.6	567.7	138.5	14.6	1.000026
62000.0	70.5	-60.1		115.4	568.6	130.1	12.3	1.000026
62500.0	68.9	-59.9		112.5	568.9	118.4	10.4	1.000025
63000.0	67.2	-60.0		109.8	568.8	110.6	11.2	1.000024

STATION ALTITUDE 3,12.75 FEET MSL  
29 JULY 83 0915 MDT  
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UPPER AIR DATA  
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GEODETIC COORDINATES  
32.89927 LAT DEG  
136.40591 LONG DEG

TABLE 14 CONT

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
63500.0	65.6	-60.0		107.2	558.8	104.0	12.2	1.000024
64000.0	64.8	-60.1		104.7	568.7	96.1	13.5	1.000023
64500.0	62.5	-60.1		102.2	568.6	89.3	15.1	1.000023
65000.0	61.0	-60.1		99.7	568.6	89.1	17.3	1.000022
65500.0	59.5	-60.2		97.4	568.5	91.2	19.9	1.000022
66000.0	58.1	-60.2		95.1	568.5	92.6	21.4	1.000021
66500.0	56.7	-60.3		92.8	568.4	93.6	21.8	1.000021
67000.0	55.4	-60.2		90.6	568.5	94.1	22.0	1.000020
67500.0	54.0	-59.7		88.2	569.2	92.7	21.6	1.000020
68000.0	52.7	-59.1		85.8	569.9	91.2	21.2	1.000019
68500.0	51.5	-58.6		83.6	570.7	90.5	21.8	1.000019
69000.0	50.3	-58.0		81.4	571.4	89.8	22.5	1.000018
69500.0	49.1	-57.4		79.3	572.2	90.7	23.4	1.000018
70000.0	47.9	-56.8		77.2	573.0	92.2	24.4	1.000017
70500.0	46.8	-56.2		75.2	573.8	93.6	25.6	1.000017
71000.0	45.7	-55.7		73.2	574.5	94.8	27.1	1.000016
71500.0	44.6	-55.1		71.3	575.3	95.8	28.7	1.000016
72000.0	43.6	-54.5		69.4	576.1			1.000015
72500.0	42.6	-53.9		67.6	576.9			1.000015
73000.0	41.6	-53.3		65.9	577.7			1.000015
73500.0	40.6	-52.7		64.2	578.4			1.000014

STATION ALTITUDE 3912.75 FEET MSL  
29 JULY 83  
ASCENSION NO. 42 0915 MDT

MANDATORY LEVELS  
2100290042  
EAST-20/CHEERY

GEODETIC COORDINATES  
32.89927 LAT DEG  
136.40591 LON DEG

TABLE 15

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5076.	24.5	10.0	40.	17.5	2.2
800.0	6812.	21.8	8.4	42.	93.0	2.8
750.0	8641.	18.5	5.6	43.	129.6	5.1
700.0	10569.	14.2	2.5	45.	98.4	10.0
650.0	12605.	9.2	-4	51.	97.8	13.5
600.0	14761.	3.2	-1.3	73.	105.4	15.2
550.0	17053.	-2.6	-4.1	89.	110.9	13.3
500.0	19517.	-7.0	-7.5	96.	82.0	9.1
450.0	22102.	-12.3	-13.4	91.	98.3	8.4
400.0	25123.	-16.2	-27.2	38.	148.8	15.7
350.0	28380.	-23.0	-36.6	27.	133.4	13.5
300.0	32022.	-31.6	-40.0	43.	119.1	15.8
250.0	36161.	-42.4			126.7	9.9
200.0	40985.	-53.4			146.8	16.1
175.0	43779.	-58.1			162.0	14.3
150.0	46914.	-64.7			192.3	13.7
125.0	50522.	-69.1			180.1	17.4
100.0	54874.	-70.9			152.7	8.4
80.0	59243.	-66.6			112.1	23.1
70.0	61947.	-59.9			127.4	11.7
60.0	65104.	-60.2			90.5	14.9
50.0	68846.	-57.9			89.7	22.6

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

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